

(„India extra Gangem“), Assam, Burma, Tonkin, Annam, Kambodja und Malayische Halbinsel. Nach Norden ist diese Rasse bis zu den Gebirgen Südsikkims und Jünnans verbreitet; im Nordosten geht sie bis in die südlichsten Provinzen Chinas (Kwantung, Kwangsi, Fukien). Ergänzende Angaben kann man auch in meiner anderen Arbeit (DOBRORUKA, im Druck) finden.

Wir haben jetzt fast alles zusammengetragen, was über diese hinterindische Leoparden-Rasse bekannt ist; nur die richtige Benennung ist noch unklar geblieben. Der Name *delacouri* Pocock 1930 ist gut bekannt, und mit einer erschöpfenden Beschreibung verbunden. Doch hat der Name *sinensis* Brass 1911 die Priorität, und die hinterindisch-malayische Leoparden-Rasse muß *Panthera pardus sinensis* Brass 1911 genannt werden.

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Note on a Mastodontoid from Libya

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Eingang des Ms. 12. 6. 1962

In the spring of 1959 Mr. J. RYKKEN, then geologist of ESSO STANDARD (Libya) INC. found about 20 km. north of Zelten (approx. 19°50' long., 28°40' lat.) a fossilized fragment of a mammalian mandible with two teeth still in situ. He delivered the fossil to me, but lack of literature for comparison made an identification at that time impossible.

As to the geologic age, not much can be said, since the fossil was found as float on the surface in the desert sand of a Wadi. A microscopic inspection shows that the matrix still attached to the bone consists of a brownish, rather coarse, angular sand of a continental type deposit which bears no resemblance to the fine, round grained, light colored desert sand which covers this area. No microfossils were found in the matrix. A check for spores and pollen had a negative result.

Description

The Mandible: Preserved is the larger part of the anterior end of the right ramus (fig. 1, 2), within which a large molar is situated. Another alveole behind this tooth indicates the existence of a second tooth of similar size which is, unfortunately, lost. About at the end of the

second molar alveole the jawbone begins to curve slightly upward, thus indicating the beginning of the ramus ascendens. Another alveole is found in front of the preserved molar. Its form and size show that a single rooted tooth was situated here, which is also lost. Preserved between the root of this tooth and the distal root of the preserved molar is a small, single rooted tooth which was not broken through. It becomes visible if the internal covering bone is removed.

The diastema distally from the first alveole arches considerably downward and forms a sharp crest, which is broken off frontally.

The symphysis, which was probably much longer than the preserved part of it, shows a strong spongiosa, thus indicating a heavy structure of the distal part of the jaw. This fact is underlined by the thickness of the compacta of the jaw as a whole, which does not show distally any decrease in strength. It can be therefore concluded, that the jaw was

frontally much prolonged. Whether incisors existed cannot be decided with certainty, but a large arterial foramen which perforates the spongiosa in the symphyseal area in distal direction gives the impression that the rich supply of blood in this area was necessary to nourish a tusk.

Three foramina mentalia perforate the preserved piece of the jaw, the largest one situated underneath the anterior part of M_1 (fig. 2).

The Dentition: The two preserved teeth differ entirely not only in size, but in the relief of their respective crowns.

The small one, still in an embryonic stage, has a conic, bicuspidal form to which two small accessorial tubercula are added laterally. Its single root is firmly attached to the alveole. It appears that this tooth was still growing and slowly replacing the other tooth that was situated somewhat frontally and extern-laterally above it (fig. 1c). The alveole of the last mentioned tooth is rather shallow and broad. In the rounded base of this alveole no perforation for major blood vessels or nerves is visible, which suggests that the root of this tooth was in a stage of reduction and the tooth about to be replaced. It is worth noting that the sharp ridge of the externally well preserved alveole indicates that the tooth was still situated within the jaw when the animal died.

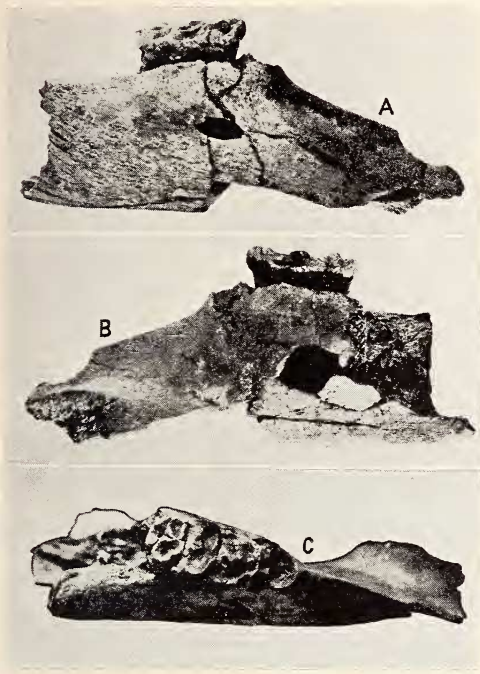


Fig. 1. A. External view, B. Internal view, C. Occlusal view of the jaw. (1/2 nat. Size)



Fig. 2. Occlusal view of M_1
(nat. size)

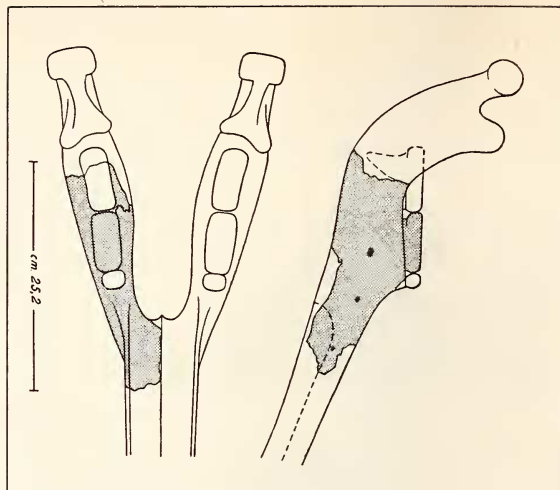


Fig. 3. Approximate shape of the whole jaw

These two teeth can be safely considered as premolars, the anterior one being most probably PM_3 and the preserved one PM_4 .

It is doubtful that both teeth ever assumed a position together within the jaw. More likely the mandibula was equipped only with one premolar in function, which was replaced during the growth of the animal by a second one.

Those rather weak premolars are followed by a trilophodont tooth with a strong double root which was firmly attached in its alveole. Its surface is much worn down by usage and shows the relief typical for the *Mastodontoidea*. It can be considered as the first permanent molar. The alveolar structure which follows this tooth proves that a second molar of about the same size was situated within the jaw, which together with M_1 was actively engaged in the process of mastication. Since the ramus arches upward at the proximal end of M_2 as the beginning of the ramus ascendens, it cannot be decided with certainty if M_3 (if developed at all) was also taking part in the chewing process. Most probably, this was not the case.

No traces of embryonic teeth underneath the molars are visible, their roots being too long anyhow to provide enough space.

Therefore it can be concluded that the replacement of the milk molars had just been completed; or that the animal replaced them in a manner which is typical for all higher Proboscidiens, namely by horizontal succession in frontal direction.

To sum up, the dentition of one lower jaw consists of:

Probably one incisor (I_2) presumably developed as tusk

No caninus

One premolar (PM_3 later replaced by PM_4)

Two (three?) molars (M_1 , M_2 , [M_3]).

The dimensions: The dimensions of the specimen are:

Extreme length, so far as preserved	25.2 cm
Length of symphysis, so far as preserved	6.2 cm
Length of diastema, between symphysis and first alveole	6.6 cm
Depth of ramus beneath M_2	7.6 cm
Length of PM_4	1.6 cm
Width of PM_4	1.8 cm
Index of PM_4	0.88

Length of M_1		6.2 cm
Width of M_1		3.2 cm
Index of M_1		1.94

Comparison and Classification

The shape of the jawbone and the relief of M_1 permits classification of the fossil with certainty within the order *Proboscidea*. This order can be divided according to OSBORN (1925) into four great stocks (suborders): 1. *Moeritherioidea*, 2. *Dinotherioidea*, 3. *Mastodontoidea*, 4. *Elephantoidea*.

1. The *Moeritherioidea* differ from our specimen in a more primitive dentition consisting of a higher number of premolars (PM_2 — PM_4), and a set of 3 molars which never developed the trilophodont pattern as in our specimen.

2. The *Dinotherioidea* differ completely by their tapirlike teeth, which do not show any resemblance with our fossil.

3. The remaining suborder *Mastodontoidea* is divided by OSBORN into two families: A. *Mastodontidae*, B. *Bunomastodontidae* (for reason of priority invalid name. = *Trilophodontidae* Falconer)

4. The *Elephantoidea* have to be excluded from this comparison because of the higher complexity of their molars and the complete lack of premolars.

A. The first family comprises the "true" Mastodons "springing directly from *Paleomastodon* of Northern Egypt." (OSBORN 1925) The genus *Paleomastodon* differs from our specimen by its molarised premolars: PM_4 having almost the same size as M_1 . PM_3 and PM_4 are double rooted. The molars of *Paleomastodon* show a more primitive pattern. In our specimen the premolars are more primitive, and single rooted. Their difference in size to the much larger M_1 is striking, which in turn is more advanced than in *Paleomastodon* by its trilophodont outlay.

The higher Mastodons arising, according to OSBORN, from *Paleomastodon* do not need to be considered in our comparison because of the much larger size and higher complexity of their molars. The last group in OSBORN's classification of this family, the *Zygolophodonts*, differ entirely by the development of their teeth, which form yokelike crests.

B. The family *Trilophodontidae* developed, according to OSBORN (1925), „from the long jawed *Phiomia* of the North African Oligocene“. In *Phiomia* again PM_4 is much molarised and double rooted as in *Paleomastodon*. The form of the jaw differs also considerably from our specimen. PM_3 is well developed and in function with PM_4 , another difference from our fossil.

The genus *Trilophodon* resembles our specimen very closely in the development of its M_1 . The form of the jaw as a whole is also much the same. But it differs in the fact that in *Trilophodon* the premolars never broke through, but remained (if developed at all) within the jaw, according to J. PIVETEAU: (Traité de Paléontologie, 6 [2] 215): „Les prémolaires ne font éruption nulle part. Elles existent cependant, sans percer, chez *Trilophodon angustidens* si l'on juge par une mandibule du Miocène supérieur de Simorre, où les deux dernières prémolaires sont en place sous les molaires de lait correspondantes et où l'alvéole de la précédente est peut-être encore visible.“ This genus gave rise to another trend of development with more complicated teeth: namely the *Tetralophodonts*, which we don't need to consider either.

The same holds true for all the other genera of this family, grouped together as *Rhynchorostrines*, *Notorostrines* and *Brevirostrines*. They do not possess premolars and their molars are more complex than those of our specimen.

Only the genus *Serridentinus* OSBORN 1923, which is closely related to *Trilophodon* possesses premolars (PM₃ and PM₄) which perforate the jaw, but are lost in the course of the individual life. M₁ is soon replaced, also, and finally only M₂ and M₃ are found within the jaw. This process is indicated in our specimen by the fact that M₁ is already much worn down before PM₄ has even broken through.

The position of the foramen mentale and frontally two accessorial foramina fit well within the range of the genus *Serridentinus*.

However, the serration at the border of the grinding teeth, which is typical of this genus and gave it its name, is not visible. The relief of the molar is unfortunately too much worn down to be conclusive; but its trilophodont outlay, the tendency to split the lophi transversally into separated tubercula, the shape of the talus and a slight forward inclination of all the lophi are rather indicative for the genus *Serridentinus*.

It can therefore be reasonably concluded that our specimen belongs to this genus.

A specific identification, however, would be highly hazardous without the possibility of comparing our fragmentary material directly with the type specimens of this genus.

The specimens depicted and described in the literature accessible to me differ from our specimen to such an extent that it might be thought to represent a new species. But it is possible, that our specimen is only an immature animal of one of the already described species. As pointed out above, our animal was still in the process of the replacement of its milk dentition. It was probably still growing, because the jawbone shows traces externally of the peculiar fibrous appearance characteristic of many young bones. This is a circumstance which could explain the relative small size of the fossil as a whole.

The animal did not stand higher than one metre to one metre and twenty centimetres.

Summary

Description and classification of a fragmentary right mandible belonging probably to the genus *Serridentinus*.

Zusammenfassung

Beschreibung und Klassifizierung eines rechten Unterkieferbruchstückes, wahrscheinlich zur Gattung *Serridentinus* gehörig.

Résumé

Déscription et classification d'une mandibule droite fragmentaire, probablement du genre *Serridentinus*.

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Serologische Befunde beim Orang-Utan (*Pongo pygmaeus* LINNAEUS 1760)¹

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Eingang des Ms. 13. 6. 1962

Im Gegensatz zum Schimpansen, dem serologisch am häufigsten geprüften Menschenaffen, liegen serologische Befunde beim Orang-Utan bisher nur in bescheidenem Umfang vor. Nach KRAMP (12) sind bislang 22 Orangs auf ihre ABO-Zugehörigkeit untersucht worden. Dabei sind zwei von BEREZNAV (1) geprüfte Orangs noch nicht erwähnt, von denen einer die Eigenschaft B, der andere AB haben soll. Die Gesamtzahl der untersuchten Individuen beträgt somit 24. Davon sollen 7 (= 29 %) der serologischen Gruppe A, 11 (= 46 %) der Gruppe B und 6 (= 25 %) der Gruppe AB angehören. Die Gruppe 0 ist beim Orang noch nicht festgestellt worden.

Nach den vorliegenden Untersuchungsergebnissen sind die Erythrozytenantigene (= Agglutinogene) des Orangs in ihrer Struktur von denen des Menschen nicht zu unterscheiden (6, 9, 16). So haben LANDSTEINER und MILLER (16) für das B-Antigen beim Orang-Utan den Nachweis geführt, daß es wie beim Menschen aus den Partial-Antigenen B₁B₂B₃ besteht. Das Partial-Antigen B₁, das als menschen-spezifisch gilt, kommt also auch beim Orang vor, während es bei allen anderen bisher untersuchten Tierarten mit B-ähnlichen Eigenschaften, einschließlich der Platyrrhina, offensichtlich fehlt. Diese Befunde wurden später von DAHR (6) durch Absorptionsversuche bestätigt. Bezüglich der Qualität des A-Rezeptors beim Orang-Utan sind uns nur die Untersuchungen von DAHR und LINDAU (9) bekannt. Die beiden Autoren prüften die Erythrozyten eines AB-Orang („Krümel“) quantitativ gegenüber Anti-A- und Anti-B-Eluaten und stellten dabei fest, daß sich diese wie Erythrozyten eines Menschen der Untergruppe A₁B verhielten. Im Orangserum sind der LANDSTEINERSCHEN

¹ Mit Unterstützung der Deutschen Forschungsgemeinschaft.

² Auszugsweise vorgetragen auf dem Symposion primatologicum in Gießen am 10. 4. 1962.